

REMARKS

The Applicants sincerely appreciate the thorough examination of the present application as evidenced by the Office Action of October 31, 2006. In particular, the Applicants appreciate the Examiner's indication that Claims 4-7 and 12 would be allowable if rewritten in independent form. In response, the Applicants have rewritten Claims 4 and 12 in independent form, thereby placing Claims 4-7 and 12 in a form that the Examiner has indicated would be allowable. In addition, the Applicants have amended Claims 1, 2, 16, and 17 to clarify patentable aspects thereof. The Applicants have also amended Claims 1, 4, 9, 11, and 12 to correct minor informalities noted therein.

In the following remarks, the Applicants will show that all claims are patentable over the cited art. Accordingly, the Applicants respectfully request allowance of all claims and a Notice of Allowance in due course.

Claims 1 And 16 Are Patentable Over The Cited Art

Claims 1 and 16 have been rejected under 35 U.S.C. Sec. 102(e) as being anticipated by U.S. Patent No. 6,697,025 to Koyanagi *et al.* (Koyanagi). The Applicants respectfully submit, however, that Claims 1 and 17 are patentable for at least the reasons discussed below. Claim 1, for example, has been amended to recite a wireless communication device comprising:

a loop antenna element including,
a first section provided in and extending a length in a first plane,
a second section spaced from the first section and provided in and extending a length in the first plane, where the second section extends along the same line as the first section or has a curvature which is a continuation of the curvature of the first section,

a third continuous section provided in a second plane essentially parallel to the first plane and essentially aligned with the first and second sections wherein a length of the third continuous section is at least as great as combined lengths of the first and second sections, and

a fourth and a fifth section interconnecting antenna sections provided in the first and second planes,

wherein the antenna sections form a three-dimensional structure having a substantial two-dimensional extension in at least one of the first and second planes. (Underline added.)

In support of the rejection of Claim 1, the Office Action refers to a reproduction of Figure 7 from Koyanagi that is provided on page 3 of the Office Action. Moreover, the Office Action states that:

Koyanagi et al in Figures 1-15 disclose a loop antenna element 103 including a first section..., a second section..., and a third section provided in a second plane essentially parallel to the first plane and essentially aligned with the first and second sections. ...

Office Action, page 2.

With reference to the reproduction of Figure 7 provided on page 3 of the Office Action, the Office Action identifies two segments of the loop antenna element 103 separated by a gap G as a third section as recited in Claim 1. The Applicants respectfully submit, however, that the two segments of the loop antenna element 103 separated by the gap G (shown in Figure 7 of Koyanagi) fail to teach or suggest a "third continuous section" as recited in Claim 1. Moreover, even if the two segments of the loop antenna element 103 separated by the gap G of Koyanagi are somehow interpreted as a "third continuous section," Koyanagi further fails to teach or suggest the third continuous section (aligned with the first and second sections) having a length that is at least as great as combined lengths of the first and second sections.

The Applicants thus submit that Koyanagi fails to teach or suggest all recitations of Claim 1 and that Claim 1 is thus patentable over the cited art. The Applicants further submit that Claim 16 is also patentable for reasons similar to those discussed above with respect to Claim 1. In addition, dependent Claims 2-3, 8-11, 13-15, and 17-18 are patentable at least as per the patentability of Claims 1 and 16 from which they depend.

Dependent Claims 2 And 17 Are Separately Patentable Over The Cited Art

Dependent Claims 2 and 17 have been rejected under 35 U.S.C. Sec. 103(a) as being unpatentable over Koyanagi in view of U.S. Patent No. 5,300,937 to Capp *et al.* (Capp).

Claims 2 and 17, however, are patentable at least as per the patentability of Claims 1 and 16 from which they depend. Claims 2 and 17 are also separately patentable for at least the additional reasons discussed below.

Claim 2, for example, depends from Claim 1 and thus includes all recitations discussed above with respect to Claim 1. In addition, Claim 2 recites that:

portions of the three-dimensional antenna structure in the first plane at least partly enclose an area in the first plane where a component can be placed so that portions of the three-dimensional antenna structure in the first plane are on opposite sides of the area in the first plane where the component can be placed. (Underline added.)

The Office Action concedes that Koyanagi fails to teach:

the three-dimensional antenna structure at least partly encloses an area in the first plane where a component can be placed and wherein the antenna is provided along at least half of the perimeter of the printed circuit board/dielectric material.

Office Action, page 4. In support of the rejection of Claim 2, the Office Action states that:

Capp et al in figures 1-3 disclose the loop antenna 101, 201/202, 301/302 at least partly encloses an area in the first plane where a component 304 can be placed....

Office Action, page 4.

As shown in Figure 3 of Capp, however, the antenna members 301 and 302 are spaced apart from the printed circuit board 303 (with the exception of end portions of the antenna members). Accordingly, Capp fails to teach or suggest portions of a three-dimensional antenna structure in a first plane on opposite sides of an area in the first plane wherein a component can be placed.

The Applicants thus submit that Capp fails to teach or suggest the additional recitations of Claim 2. Accordingly, Claim 2 is separately patentable over the cited art. The

Applicants further submit that Claim 17 is separately patentable for reasons similar to those discussed above with respect to Claim 2.

Dependent Claim 15 Is Separately Patentable Over The Cited Art

Dependent Claim 15 has been rejected under 35 U.S.C. Sec. 103(a) as being unpatentable over Koyanagi in view of U.S. Patent No. 5,678,202 to Filimon *et al.* (Filimon). Claim 15, however, is patentable at least as per the patentability of Claim 1 from which it depends. Claim 15 is also separately patentable for at least the additional reasons discussed below.

Claim 15 depends from Claim 14, and Claim 14 in turn depends from Claim 1. Claim 1 thus includes all recitations discussed above with respect to Claim 1. In addition, Claim 15 includes the recitations that the device is a portable communication device and that the portable communication device is a headset.

The Office Action concedes that Koyanagi fails to teach the wireless communications device of Claim 1 wherein the wireless communications device is a head set. In support of the rejection of Claim 15, the Office Action states that:

Filimon et al in figure 1 disclose the portable communications device is a headset (column 3, lines 15-22). It would have been obvious to employ the portable communication device is a headset as taught by Filimon et al for the purpose of providing hands-free operation.

Office Action, pages 4-5. The cited portion of Filimon, however, states that:

A headset ... housing a microphone and speaker may be electrically coupled to a portable unit 101 via a connecting cable, or such microphone and speaker may be housed in the portable unit 101 within the downward-facing surface. Portable unit 101 may be worn by a user, for example, carried in a user's pocket or clipped to a user's belt or stored in the cradle 103 of base unit 101. (Underline added.)

Filimon, col. 3, lines 20-27.

Accordingly, Filimon discusses a headset (housing a microphone and speaker) that is coupled to a portable unit 101 via a connecting cable. Accordingly, Filimon teaches away

from a wireless communications device that is a headset including a loop antenna element as recited in Claim 15. Moreover, the portable unit 101 of Filimon cannot be interpreted as a headset because the portable unit 101 is carried in a user's pocket or clipped to a user's belt.

The Applicants thus submit that Filimon fails to teach or suggest the additional recitations of Claim 15. Accordingly, Claim 15 is separately patentable over the cited art.

CONCLUSION

Accordingly, the Applicants submit that all pending claims in the present application are in condition for allowance, and a Notice of Allowance is respectfully requested in due course. The Examiner is encouraged to contact the undersigned attorney by telephone should any additional issues need to be addressed.

Respectfully submitted,



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